

[54] **PUNCH**

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[21] Appl. No.: **70,837**

FOREIGN PATENTS OR APPLICATIONS

616,933	8/1935	Germany.....	83/633
683,624	11/1939	Germany.....	83/633

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[52] U.S. Cl. 83/468, 83/522, 83/633

[51] Int. Cl.**B26d 7/02**

[58] Field of Search.....83/522, 687, 633, 468

[56] **References Cited**

UNITED STATES PATENTS

3,469,486	9/1969	Neilsen.....	83/633 X
2,149,268	3/1939	Brennan.....	83/468

[57] **ABSTRACT**

A punch is shown having a body, a punch element pivotally connected to the body, and a guide member slidably movable within the body. The guide member has indicia thereupon which are selectively viewable through an opening within the body. A latch structure is provided to selectively retain the guide member in various positions. Holding means are also provided to selectively retain the punch element in depressed position.

7 Claims, 14 Drawing Figures

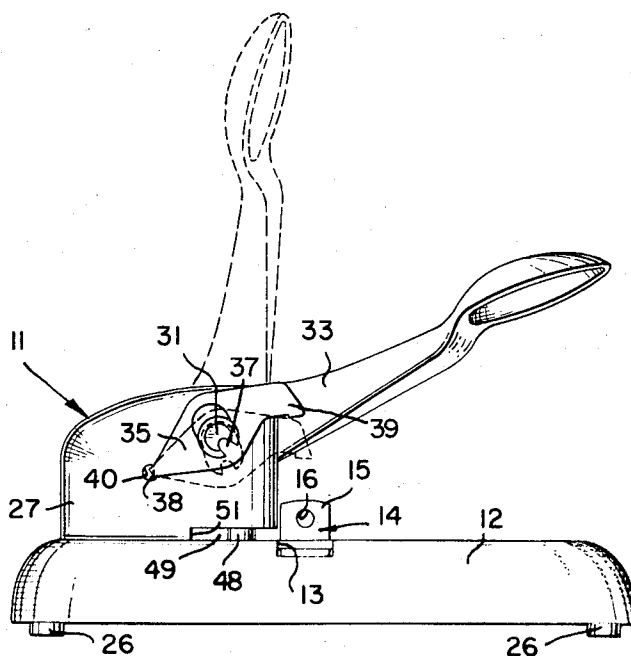


FIG. 1

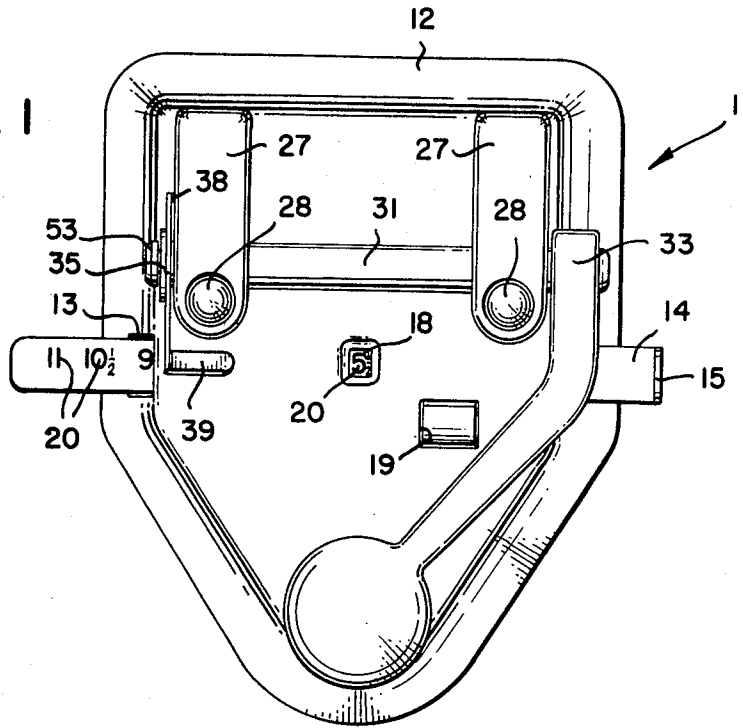


FIG. 3

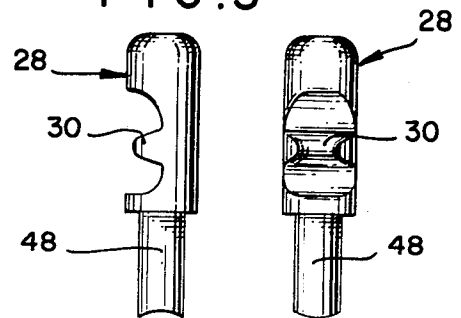
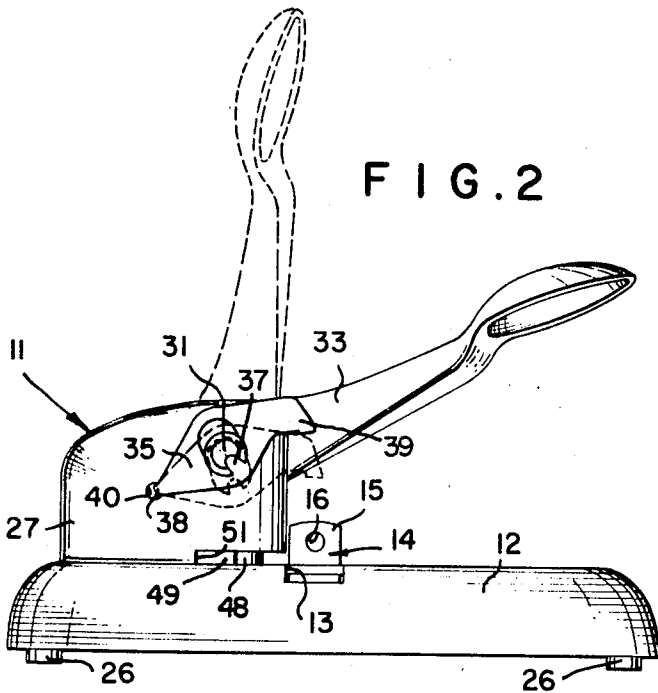


FIG. 4



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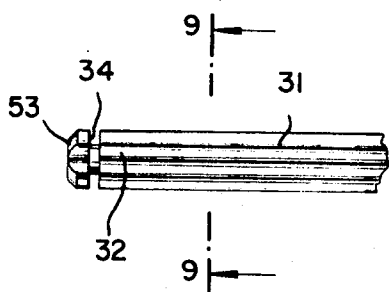
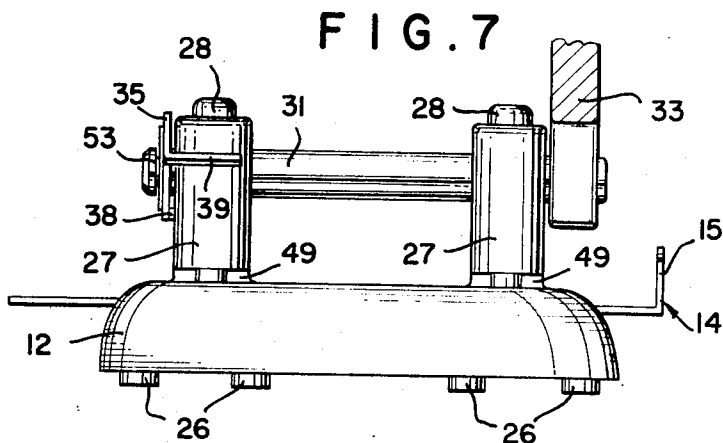
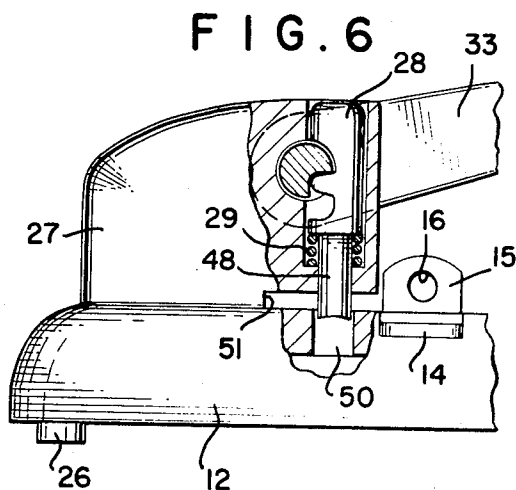
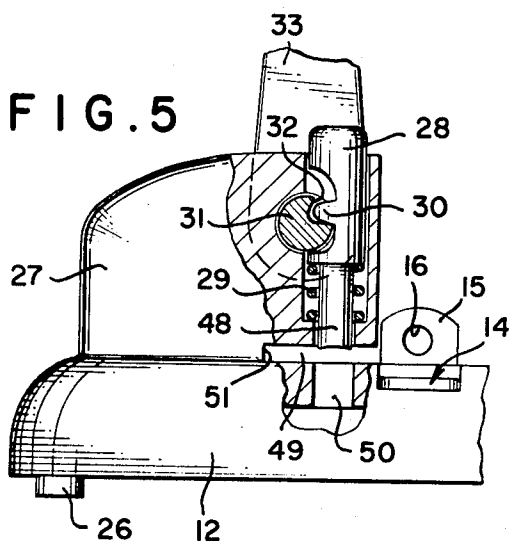
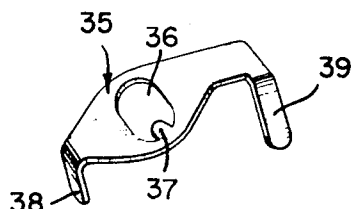
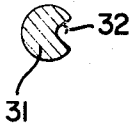


FIG. 9



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FIG. II

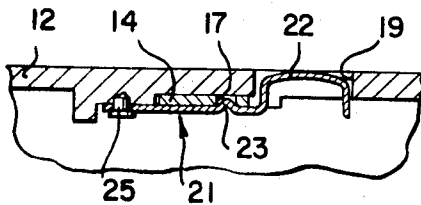
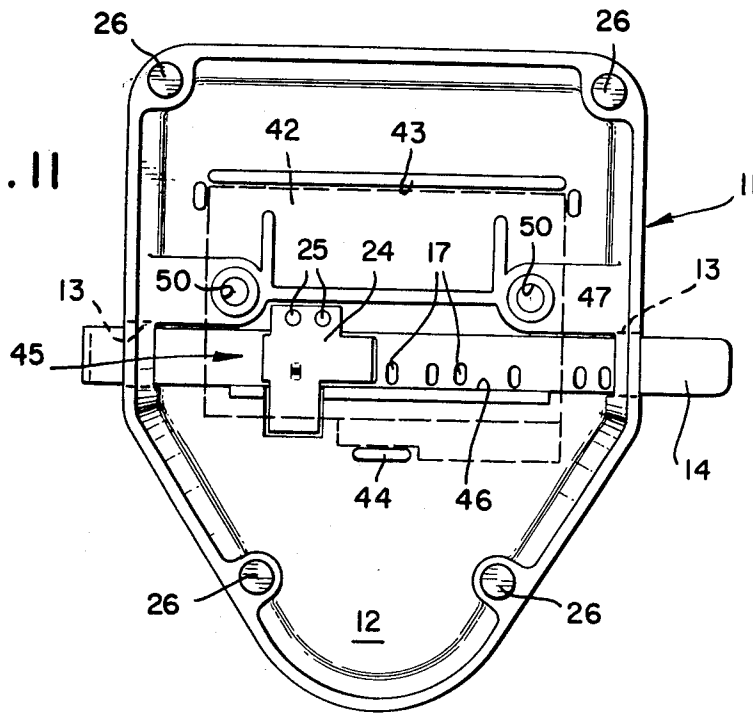


FIG. 12

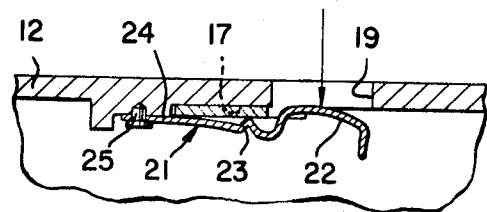


FIG. 13

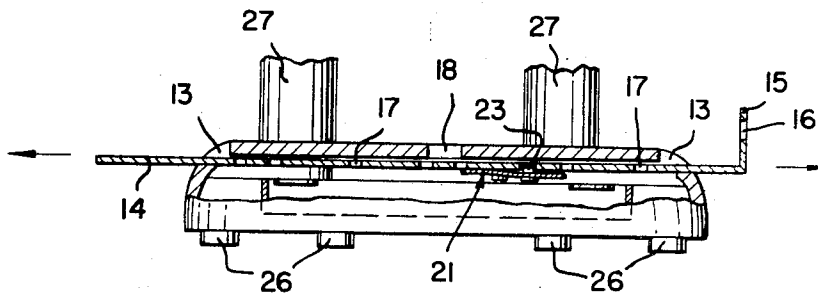


FIG. 14

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PUNCH

DESCRIPTION OF THE INVENTION

This invention relates to a punch which is used to perforate paper or the like with a plurality of fixedly spaced openings which are themselves spaced equidistantly from the edges of the sheet. In this type of punch the equidistant spacing is produced by a guide which abuts one edge of the sheet to be punched. The guide is movable so that different widths of sheets will be properly positioned beneath the punch to produce the openings in the correct location.

Punches of the above type are quite well known and have been used for years. However these punches suffer from two significant disadvantages. Firstly there has been, heretofore, no simple means provided to read the indicia upon the guide with respect to the size of sheet to be punched. Generally this indicia has been placed upon the guide and is to be brought into abutting relationship with the edge of the punch body. This is inconvenient and unsatisfactory. Secondly there has not been a simple and easy means provided to retain the punch handle in down position when the punch is not in use so that the punch can be easily retained within a desk drawer or the like.

The structure of this invention corrects the disadvantages of the prior art and, in addition, provides for a simple and foolproof latch means to retain the guide member in desired position.

The invention may be briefly described as comprising a punch structure which is formed with a body, perforating means operatively connected with the body and means to retain the guide member in selectively pre-determined positions. The invention may also include means to retain the punch handle in its down position when desired.

The invention will now be described by reference to the accompanying drawings which are made a part of this invention.

FIG. 1 is a plan view of a punch made in accordance with this invention.

FIG. 2 is a side perspective view of a punch made in accordance with this invention, with the punch handle selectively retained in "down" position. The normal "up" position of the handle is indicated in phantom lines.

FIG. 3 is a detail side elevational view of one of the perforating members used in connection with this invention.

FIG. 4 is a detail front elevational view of the perforating member shown in FIG. 3.

FIG. 5 is a fragmentary side elevational view of the punch of this invention, partly in section, and showing the manner in which the perforating members are actuated by the handle member. In this view the perforating members are in the inactive position and the handle is in the "up" position.

FIG. 6 is a view similar to that of FIG. 5 but showing the handle in the "down" position and the perforating means activated.

FIG. 7 is a fragmentary front perspective view of the punch of this invention showing the handle member retained in the "down" position.

FIG. 8 is a fragmentary detail front elevational view of the actuating member of this invention.

FIG. 9 is a cross-sectional view of the actuating member shown in FIG. 8 taken along lines 9—9 of FIG. 8.

FIG. 10 is a detail perspective view of the retaining member of this invention.

FIG. 11 is a bottom plan view showing the underside of the body of the punch of this invention. In this view the means for retaining the perforated portions of the paper punched out are only shown diagrammatically.

FIG. 12 is a fragmentary cross-sectional view taken along lines 12—12 of FIG. 11 and showing the details of the latch member utilized to retain the guide means in selective positions. In this view the latch member is in the normal locked position.

FIG. 13 is a view similar to that of FIG. 12 but showing the latch member in its released position so as to permit the guide member to move to another position.

FIG. 14 is a detail fragmentary front perspective view of the punch of this invention showing the manner in which the guide member is slidably retained within the body portion thereof.

The invention will now be further described by reference to the specific form thereof as shown in the accompanying drawings. In this connection, however, the reader is cautioned to note that the specific form of this invention as shown in the specification herein is for illustrative purposes and for purposes of example only. Various changes and modifications can obviously be made within the spirit and scope of this invention without departing therefrom.

The punch 11 of this invention is formed with a body 12 which is provided with a plurality of opposite openings 13 within which a guide 14 is slidably retained. Slideway 45 formed between elements 46 and 47 aids in the retention of guide 14. Guide 14 bears an upstanding portion 15 which is in turn provided with a hole 16. The main portion of guide 14 is provided with a plurality of spaced openings 17 therewithin which openings are adjacent indicating means 20 which bear the size indications of the paper to be punched by the device.

Body 12 is provided with a window opening 18 therewithin through which indicia 20 may be selectively displayed. The indicia 20 displayed will correspond to the position of the guide necessary for the particular size of paper to be perforated in order to centrally perforate the same.

An additional window opening 19 is provided within body 12 through which handle portion 22 of latch 21 projects. Latch 21 is made of springable material (preferably spring steel) and has a portion 24 which underlies guide 14 and aids in retaining guide 14 in position. Portion 24 of latch 21 is secured to body 12 by rivets 25.

Latch 21 is also provided with an upstanding portion 23 which can selectively be retained within an opening 17 in guide 14 (FIG. 12).

A plurality of resilient feet 26 are provided to support body 12 upon a desk table or the like.

A plurality of spaced upstanding supports 27 are carried by body 12. These supports are spaced from one another for the distance that the perforations are to be provided within a sheet by the punch of this invention. Within each of supports 27 is perforating member 28 which is slidably and downwardly movable therewithin.

Each member 28 is supported by a coil spring 29 which is disposed about lower portion 48 of each member 28. Portions 48 are adapted to abut the paper to be perforated and to perforate the same.

It is noted that each of supports 27 is spaced from body 12 at their forward portions so that a paper sheet can be placed within the spaced portions 49. The rear edge of the paper sheet will then be retained by the rear wall 51 of the spaced portions 49. An additional opening 50 is provided within body 12 so that portions 48 of members 28 can move further downwardly after perforating the paper sheet involved.

Each of perforating members 28 bears a projection 30 (FIGS. 5 and 6) and each projection 30 is retained within an elongated recess 32 provided within actuating member 31. Actuating member 31 in turn passes through an opening provided within each of members 27 and extends transversely on each side of members 27. One of the transversely extending portions 52 of actuating member 31 carries handle 33 which is secured thereto by a recess therewithin having a projection which is permanently secured within recess 32. The opposite transversely extending portion 53 is provided with an annular groove 34 within which a retaining member 35 is disposed by means of an elongated opening 36 therewithin. Within opening 36 is a projection 37 which is selectively disposable within the appropriate end portion of recess 32. Retaining member 35 is also provided with a handle portion 39 and a tang portion 38 which is permanently disposed within opening 40 in the side of the appropriate upstanding support 27 (FIG. 2).

A C-clamp member (not shown) may be disposed upon the outside face of retaining member 35 so as to prevent this member from being accidentally displaced from its position in groove 34 of member 31.

A perforations retaining member 43 (shown diagrammatically in FIG. 11) is provided to prevent the perforated portions of the paper from falling upon the desk or table. Member 43 is retained in position between projecting portions 43 and 44 and can be removed from this position to deposit the perforated portions into a waste receptacle when desired.

With the foregoing specific description of this invention the operation thereof may now be explained.

A paper sheet or other element to be punched is placed within spaces 49 and is pushed against rear wall 51. This will determine the depth of the punch from the top of the sheet. The size of the sheet has been determined prior to the punching thereof and latch handle 22 depressed. At the same time guide 14 is slid along body 12 until the indicia corresponding to the width of the paper sheet appears within window 18. At this point the latch handle is released and the guide slid until the portion 23 of the latch clicks into the appropriate recess 17. This fixedly positions the guide.

The side edge of the paper sheet is then placed into abutting relationship with portion 15 of guide 14 and handle 33 moved downwardly to punch the sheet. After the sheet is punched release of the handle will cause the handle to assume its "up" position because of the springs 29 which are compressed on the "down" stroke and are released on the "up" stroke.

When it is desired to retain handle 33 in its "down"

position member 39 is moved upwardly into the position shown by solid lines in FIG. 2 while handle 33 is held down. This causes projection 37 to enter recess 32 of actuating member 31 and will prevent this member from turning. Thus the handle is retained in its "down" position. However all that it is necessary to do to release the handle is to move it slightly further downwardly. This will cause member 39 to slide downwardly into the position shown by dotted lines in FIG. 2 so that projection 37 will fall out of recess 32. Springs 29 will then cause handle 33 to move to "up" position and the punch is ready for use again.

The foregoing sets forth the manner in which the operation of this invention is achieved.

We claim:

1. A punch having a body, a plurality of spaced upstanding supports upon said body, a perforating member slidably disposed within each of said upstanding supports, an actuating member disposed within each of said supports and extending thereacross, said actuating member connected to each of said perforating members, said actuating member being also provided with a longitudinal recess therewithin, holding means upon each of said perforating members connected with said longitudinal recess, a handle member secured to said actuating member and a retaining member operatively connected with said actuating member and having a projection adapted to selectively fit within the recess within said actuating member so that said handle member can be retained in downward position.

2. A punch as described in claim 1 said retaining member provided with an elongated opening therewithin, said projection extending into said opening, said actuating member provided with an annular groove at one end thereof and said retaining member being disposed within said annular groove.

3. A punch as described in claim 2 said actuating member projecting transversely from one of said upstanding supports and said annular groove being provided upon the projecting portion of said actuating member.

4. A punch as described in claim 2 including a guide member slidably movable within said body and means to retain said guide member in selectively pre-determined positions.

5. A punch as described in claim 4 including an opening upon said body and a plurality of indicia upon said guide selectively registerable with the opening therewithin.

6. A punch as described in claim 5 said means to retain said guide member in selectively pre-determined positions comprising a latch member upon said body and spaced means upon said guide selectively abutable with said latch member.

7. A punch as described in claim 6 including a second opening within said body, said latch being made of springable material and secured beneath said body, said latch underlying said guide and having a portion disposed within said second opening, the underlying portion of said latch having an upwardly extending portion selectively abutable with the spaced means upon said guide.

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